

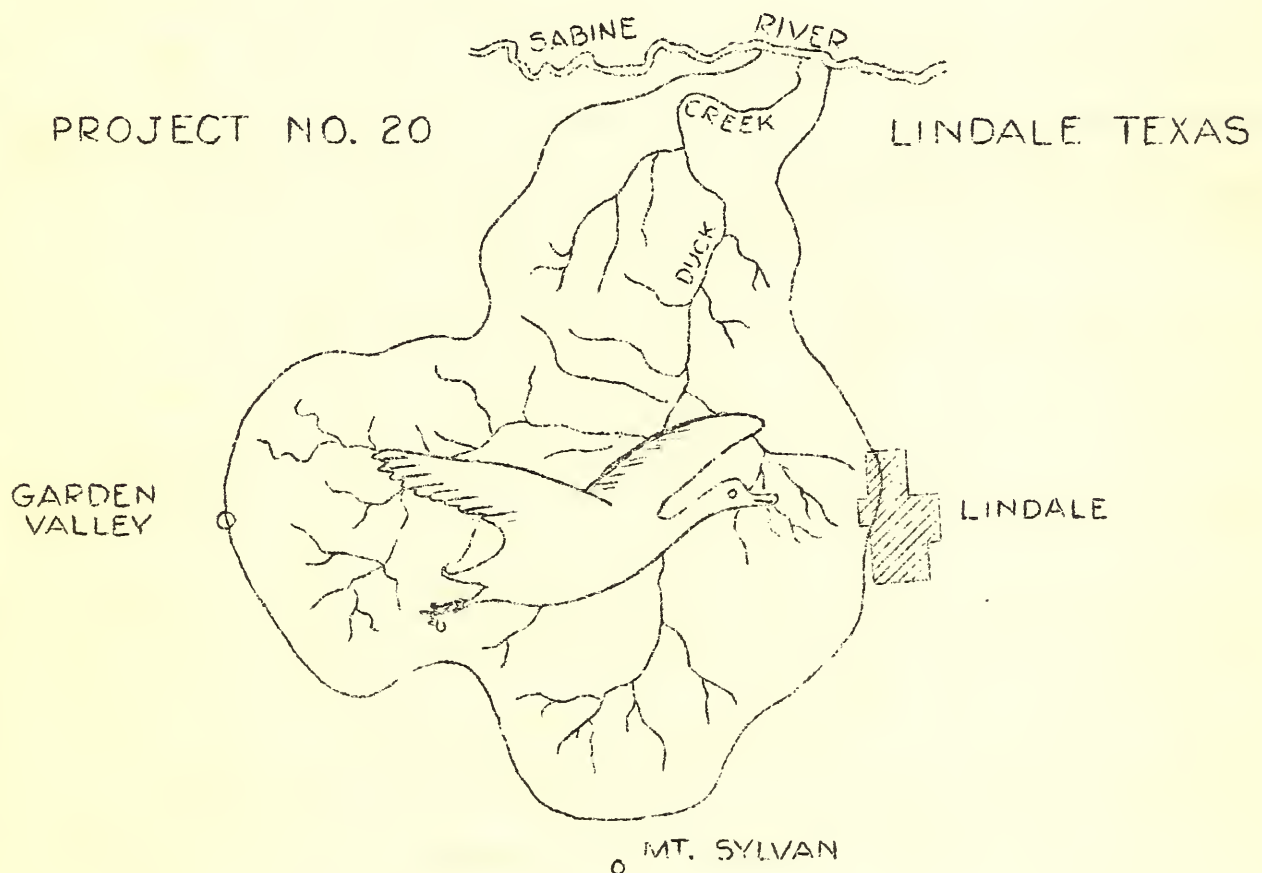
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# DUCK CREEK NEWS

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
SOIL EROSION SERVICE



FEB 20 1935

Dr. A. B. Conner, Director of the Texas Agricultural Experiment Station, is a member of the State Advisory Committee of the Soil Erosion Service in Texas. He is an acknowledged leader of American agriculture because of his keen insight and clear-cut judgment concerning problems pertaining to agriculture.

Dr. Conner has long recognized the menace of soil erosion both from the standpoints of the destruction of the land and the depletion of the soil which remains. We are pleased to quote herewith a statement from Dr. Conner, setting forth some of the benefits to be derived from the application of a systematic program of erosion control and better land utilization.

"In a systematic program for the protection and preservation of our land, such as that in progress on the Duck Creek watershed, there are considerations over and above the protective measures which ought to be fully appreciated and evaluated by everyone. I refer to the fact that these same protective measures also permit of the addition of organic matter, thereby actually increasing the water-holding capacity of the soil. The storage of water is vital to ample production in much of the area represented by the Duck Creek Erosion Control unit. We falsely assume that there is an abundance of rainfall for a full measure of production, but a study of the records will show a shortage of available water generally at the time our crops are fruiting heavily, which cuts down the yield. Any measures which tend to put the soil in condition to absorb and hold larger supplies of moisture for use at the critical period in crop production will actually safeguard against low yields and add profits to the enterprise. This is only one of the many added benefits that can be realized by systematic work toward the preservation and better utilization of land."

-- A. B. Conner.

## KEEP FIRE OUT OF PASTURE AND WOODS

Fire in the cook stove or in the fire place is one of man's best friends. Fire in the woods or in the pasture, however, is a destroyer, and an enemy to man.

Fire in the woods destroys the cover of leaves and decaying material which makes the soil fertile and gives it great capacity for holding water. Fire destroys young trees and damages or kills older ones. When the protective covering of leaves, decayed material and tree growth is gone, rainwater rushes unobstructed down the slope, the soil is carried off and gullies are formed.

Fire in the pasture destroys seeds of valuable grazing plants, both grasses and clovers. It destroys the organic matter and decreases the fertility and moisture holding capacity of the soil. It thins and weakens the stand of the hardiest pasture plants. After the grass and covering of organic matter is burned off, the runoff of rainwater is increased, and soil losses by erosion increase.

Unburned, ungrazed woodland, and well sodded, unburned pasture give us the nearest to perfect erosion control that we can get. Protect your own interests by KEEPING FIRE OUT OF YOUR WOODLAND AND PASTURE.

## REPAIRING CONTOUR FURROWS

The recent heavy rains found every weak place in the pasture contour furrows, as was expected. Wherever there was a low place in the furrow, such as was left when the plow hit a rock or hard spot and ran out of the ground, or a trail left by livestock, the water ran over and followed its usual course down the slope. In justice to the contour furrowing work, however, we have not seen one that was put up to the proper uniform height and width that lost any water.

These furrows play a very important part in holding the soil and water and improving your pastures, but to do so they must be maintained until they are sodded over. Now is the time to repair the breaks, using a shovel where the damage is small, and replowing them where the ridge has flattened out too much. Where stock trails cross the furrows you save time and labor by merely blocking the upper side of the furrow on each side of the trail. The stock will probably continue using the trail, but if you have shut off the water from each side, it will do little or no damage.

Some farmers have already gone over their pastures and closed the ends of the furrows where they were left open. Remember that if you take milk away from a small calf, you'll starve it to death. If you stop the water from flowing into a wash or gully, you stop the wash from growing larger. Be sure that the ends of your contours are turned up about five or six feet back from a wash, so as to stop the water from flowing down its old course.

A chain must have all strong links if it is to do its job without breaking. A contour furrow must have proper uniform height and width and turned up at the ends if it is to hold your soil and water where they belong and improve your pasture.



## SKILL SCHOOL

Ten East Texas Vocational Agriculture teachers, several of them accompanied by groups of students and farmers, attended the first "skill school" held on the Duck Creek Project February 16. The visitors, some of whom had come a distance of 180 miles, arrived early and spent the day on farms observing and doing various phases of erosion control work. They received instruction and practice in running terrace lines and checking the completed terraces, laying off strip crop lines, construction of inexpensive types of gully dams, running contour lines in pastures, construction of contour furrows and seeding and planting of pastures, and in preparation of bait and poisoning and trapping of gophers.

Although the weather was very unfavorable for outdoor work, most of the group "stuck it out" until the entire demonstration was finished, and then concluded the visit with a trip over the area to observe the progress of the work.

## SEEING - THEN DOING

Early in January Mr. J. M. Hancock, Instructor of Vocational Agriculture at Whitehouse, Texas, brought his students to the Duck Creek Project to study the various parts of the erosion control program. A little later he brought a large group of adult farmers, who spent the day going over the work.

That they were impressed by what they saw is borne out by the fact that since the visits Mr. Hancock and his boys have run 102,400 yards of lines for contour furrows on pastures, and 93,230 yards have already been built on fourteen farms.

They came, - they saw, - they went home and put into practice things they saw!

Congratulations, Mr. Hancock, vocational boys, and Whitehouse farmers!

## CHARTS

Two special charts have been prepared and distributed to a large number of the cooperators in the area at their request. The first chart, "Laying off Contour Lines and Breaking Land for Contour Tillage before Laying off Rows", with printed instruction on the chart, shows an easy method to get the fields in shape to "receive" rows on contour.

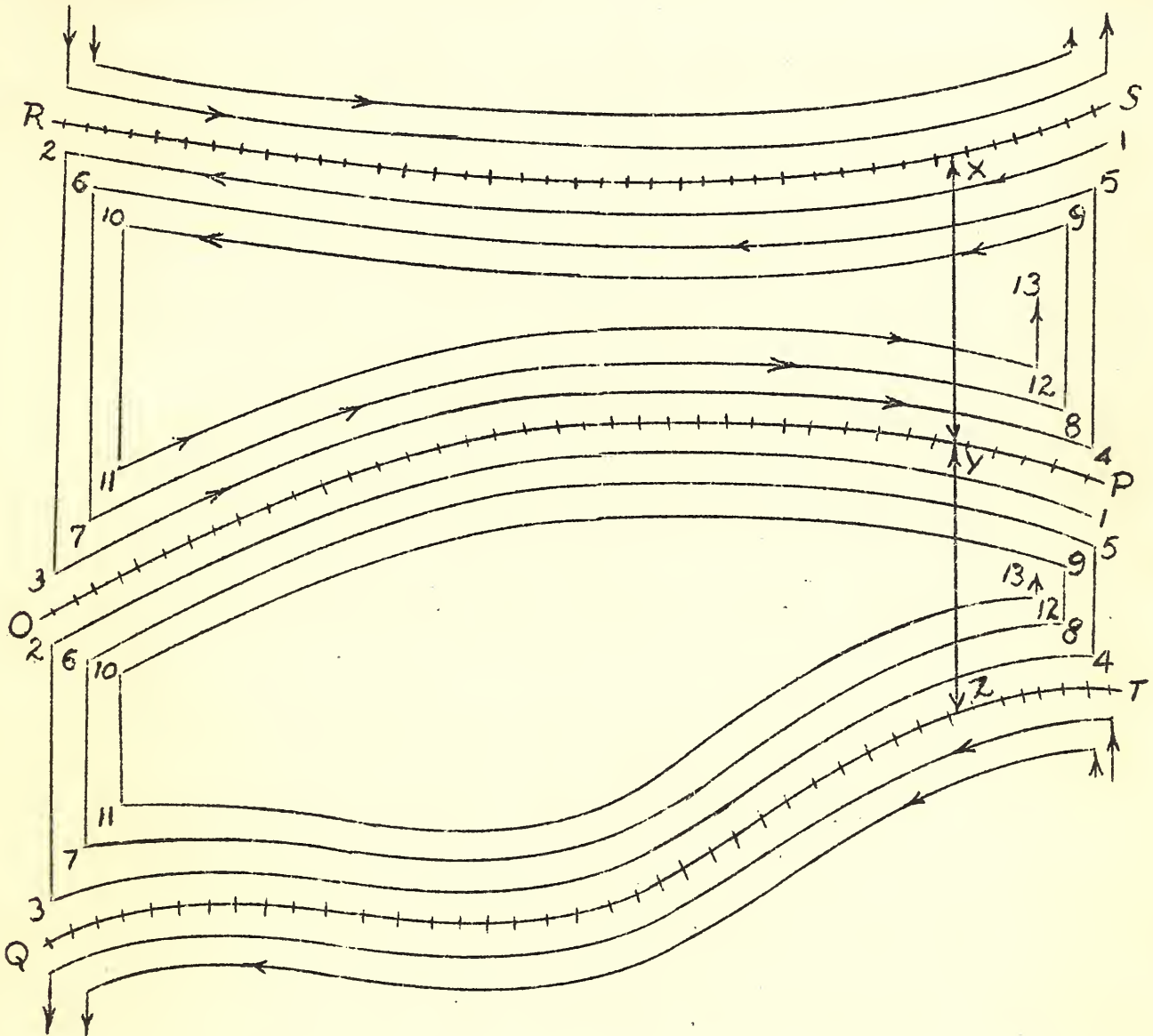
The second chart with printed information, "Laying off Rows on Contour", illustrates the system most used by farmers on gradual slopes in laying off their rows with the most practical tool they have. Some use a "shackled" cultivator to follow the exact contour line, with one foot, while the other foot establishes the mark for the next row at an equal distance at all points along the exact contour row. Each row is run from the marks established in this way along the contour lines run by the engineers and marked for guide rows in laying off the other rows.

See the above mentioned charts on the next two pages.

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LAYING OFF CONTOUR LINES AND BREAKING LAND FOR CONTOUR  
TILLAGE BEFORE LAYING OFF ROWS

Beginning at point as at X, lay off contour line R. S. Then measuring from line R. S. at some uniform point on slope, as at X, measure 100 ft. down to point Y. Thence beginning at point Y lay off contour line O. P. From point Y on line O. P. which is on a uniform slope, measure down 100 ft. to point Z. Then lay off from this point, contour line Q. T.



After contour lines have been established, take the area between each two contour lines, and beginning as at 1, thence to 2, to 3, to 4, to 5, to 6, to 7, to 8, to 9, to 10, to 11, to 12, and to 13 and so on until all of area is broken out with large moldboard or disk plow.

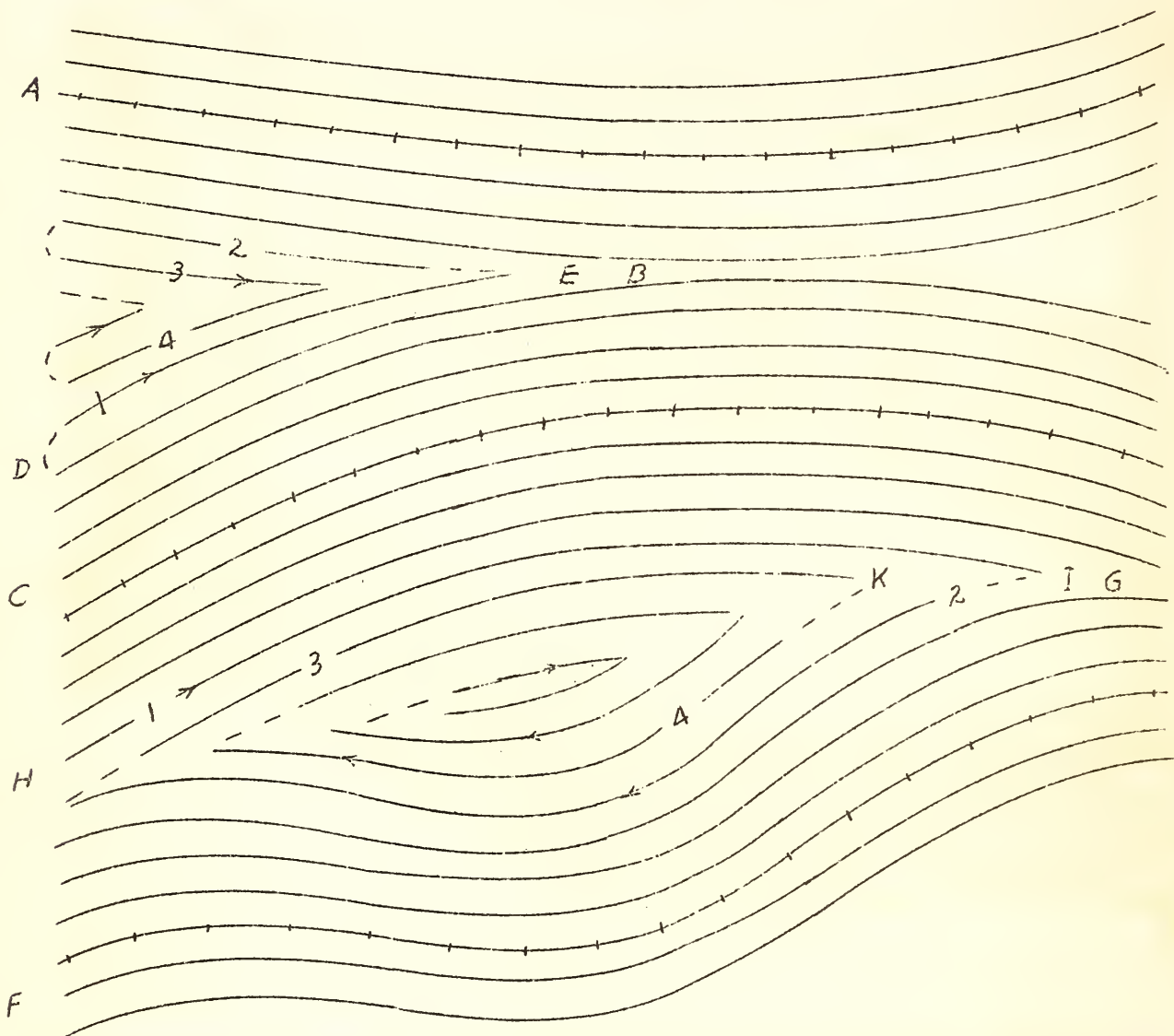
The next step is laying off rows which is explained on another chart.

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LAYING OFF ROWS ON THE CONTOUR

Begin at contour line A with the first row on contour A and lay off the rows until you are half way between the contour lines at the narrowest place as at B. Then go to contour line as at C and lay off rows until they meet the rows already layed off to B. You are now ready to lay in the point rows. Begin at D and plow furrow No. 1 to point E. Make three-quarter turn and go down opposite side on furrow No. 2. Turn at end and come back on furrows No. 3 to point. Make three-quarter turn and go back on furrow No. 4. Continue this until rows are layed off.

WHERE POSSIBLE ALWAYS BEGIN AT THE TOP CONTOUR LINE



For laying off rows from F. to C, begin at F. and lay off to narrowest point at G. Go to C and lay off toward F until rows meet at G. Begin at H and plow furrow No. 1 to point at I, make a three-quarter turn and come back on opposite side and make furrow No. 2. Turn to opposite side and plow furrow No. 3 to point K. Make three-quarter turn and plow furrow No. 4 and continue until the rows are all layed off.



## U. S. BIOLOGICAL SURVEY - A. & M. COLLEGE COOPERATING

Cooperating with the Soil Erosion Service in the gopher control campaign are the pioneers in this work in Texas -- the U. S. Biological Survey (U. S. D. A.) and the A. & M. College of Texas. For years these organizations have recognized the immense damage done by the pocket gopher, both from the standpoints of causing soil erosion and destruction of crops. We wish to acknowledge the advice and assistance given us by Mr. L. C. Whitehead, Leader in Rodent Control, U. S. Biological Survey, Smith-Young Tower, San Antonio, Texas, and his able co-workers.

## PROGRESS OF THE GOPHER (SALAMANDER) ERADICATION CAMPAIGN

Excellent reports concerning the effectiveness of the gopher (salamander) eradication campaign which was started early in January have been made by farmers on whose farms the work has been done. Mr. Chas. Flewellen, whose farm was the first covered, states that he has found a number of dead gophers while plowing, and that he has seen very few fresh mounds. Similar reports have come from a large number of other farmers, which indicate that probably eighty to ninety percent of the gophers have been killed on the farms worked.

In order to secure complete and lasting benefit from the campaign some follow-up work must be done by the farmer. Even if only a half dozen gophers are left on your farm at this time, by next year they will have multiplied so that you will be suffering damage again. A few hours of work spent now in killing the stragglers will save you many dollars and much work later on. Remember that no terrace, no pasture contour furrow or gully structure is safe from breaking as long as a gopher is around, to say nothing of the damage done to your crops, the gullies they start in your fields, and the trouble they cause around your gardens, wells, etc.

Anyone living in the Duck Creek area may check out traps at the Soil Erosion Service office in Lindale. These traps are for your free use, the only requirement being that you return them when they are called for. If you have your own traps or wish to buy them, well and good -- the thing we wish to urge you to do is to KILL OUT THE GOPHERS that are left on your farm, and DO IT NOW, while the number is small.

Please remember to keep a record of the number of gophers you trap, as we wish to include the number trapped in our reports to the U. S. Biological Survey and the A. & M. College, who are cooperating with us in this campaign.

## WATCH THE GULLY STRUCTURES!

The Soil Erosion Service is constructing the necessary dams, diversion ditches and flood control structures in the active gullies on the farms whose owners have expressed their desire to cooperate with the Service in saving their soil and checking the devastating action of gullying. Trees, vines and grasses are being planted to complete the job of permanently controlling this type of soil erosion.

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One very essential and important phase of the job remains to be done, and this is a responsibility of each cooperator. Under Section 3 of the Cooperative Agreement the cooperator agrees to maintain for a period of five years the control structures built. It is very important that the structures be inspected after each rain, and that any minor defects or breaks which may develop be immediately repaired. It is much easier to plug a small wash or hole than a large one, and thus prevent a structure from being destroyed by undermining or sidecutting. All damage should be reported to the Soil Erosion Service.

#### PROTECTING TERRACE OUTLET CHANNELS

The Soil Erosion Service is using methods of terrace outlet control which the farmer can duplicate with his own equipment and labor. In line with this policy, sodded channels are being used for outlet protection wherever it is felt that they will be adequate. Since it is a difficult task under the best of conditions to establish a sod cover on subsoil, the cooperator can assist greatly by giving these channels careful protection. If the outlet channels are used as roadways for wagons or agricultural machinery, ruts are likely to be formed in the channels which will result in the destruction of the sod. Stock also do considerable damage to a channel in going up and down it, especially during wet periods. The extent of your cooperation in protecting these channels may determine the success or failure of this work.

#### SOILS OF THE DUCK CREEK AREA

In previous issues we have described Kirvin, Bowie, Nacogdoches, and Norfolk soils. Now we take up the alluvial soils which are common to the region.

Alluvial soils: Probably as much as 15 per cent of the Duck Creek area is occupied by alluvial soils. These soils consist of soil materials transported by water from eroded upland surfaces and deposited in the stream valleys. They consist of deep beds of materials which have not been in place long enough to have developed soil characteristics similar to the upland soils. The local stream bottoms are from a few hundred feet to a half mile in width.

The soils are composed of local soil materials and are mostly of the Ochlockonee and Hannahatchie series. They are light colored for the most part and range in textural classes from the light sandy to the light clay soils. They are deep, relatively rich in organic matter, acid in reaction, and are friable and quite permeable.

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Ochlockonee Soils: The Ochlockonee series comprises brown and dark gray soils which grade below into mottled yellow and gray subsoils. The surface is low and nearly flat so that surface drainage is slow. Although the subsoils are rapidly penetrated by water, the water table is high and underdrainage is not rapid. During the warm months of the year, the soils are dry most of the time. Although overflows occur occasionally and heavy rainfall covers the surface with water at times, the natural drainage is sufficient in many places to enable crop production. The series includes several types of soil ranging from very light sandy soils to clay soils, the latter having the slowest drainage. The natural growth is mainly water-oak, willow-oak, ash, elm, hackberry and various other trees.

Hannahatchie Soils: The Hannahatchie soils are red or reddish-brown in color and have reddish-brown subsoils. These occur in narrow stream bottoms mainly within the redlands section. They consist of soil materials washed mostly from local areas of the Nacogdoches soils. The surface is flat and overflows occur at times, but the soils are mostly rather light in texture and water passes downward readily giving sufficient drainage for successful cultivation. Timber growth consists of some species of oak, sweet gum, elm and other trees.

#### RESOLUTION

A resolution pledging full support to the Soil Erosion Service demonstration north and west of Lindale and strongly urging Congress and the administration to continue this project and increase the number of such demonstrations over the country was unanimously passed in a mass meeting of cooperating farmers in Lindale, January 23.

Following is a copy of the resolution:

On the 23rd day of January 1935 the following resolution was adopted at a mass meeting of cooperating farmers, held in Lindale, Texas, for the purpose of discussing the soil erosion menace.

WHEREAS, it is recognized by all of us that productive soil is the greatest asset of our Nation and should be preserved, and

WHEREAS, unrestrained soil erosion is rapidly removing the fertile topsoil from our rolling lands, sanding over our low lands, choking stream channels, increasing the damage by floods and drouths, decreasing the yields of our crops, reducing our incomes from agricultural production, and thereby resulting in lowered standards of living and health and in many cases actual poverty and destitution, and

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RESOLUTION CONT'D.

WHEREAS, it is our sincere desire to restrain erosion from further damage to our lands yet we realize that because of the extent to which soil wastage has already progressed that a program of erosion control must necessarily be one extending over a period of years and one entailing considerable expense; in fact, requiring a much greater outlay of money than we are able to provide, and

WHEREAS, we realize that no single means of combat is sufficient to control the great waste of soil and water now going on but that we must use a combination of all of the proved methods such as reforestation, permanent pastures, removal of submarginal lands from cultivation, terracing, strip cropping, contour farming, gully control, crop rotation, and the control of pocket gophers, if we are to succeed in halting this menace which now threatens our farms and our homes, and

WHEREAS, the Soil Erosion Service of the U. S. Department of the Interior, at our request has seen fit to establish a 25,000 acre demonstration area on the watershed of Duck Creek, and has assisted us in setting up a program in which we contribute everything that we can in the way of labor, teams, tools, equipment and materials on our farms, and by which the Government provides the supervision and assists us in the things we cannot do for ourselves to save the soil on our farms through the use of all the methods of control outlined above, and

WHEREAS, the appropriation for the operation of the Soil Erosion Service is from the Public Works Administration and terminates June 30, 1935,

THEREFORE BE IT RESOLVED, that we, the cooperating farmers in the Duck Creek watershed, do hereby express our full appreciation for the assistance given us by the Soil Erosion Service and pledge our cooperation to the end that the work of erosion control and farm reorganization carried out on our farms may be made complete demonstrations which can and should be followed by all of the farmers living on the 33,000,000 acres of land of which the Duck Creek watershed is typical; that we urge making the Soil Erosion Service a permanent bureau of our Federal Government at the earliest possible date and that this organization be permitted to extend its wonderful help to include other areas such as ours, and that it be given adequate support by Congress to the end that we may save the soil we have left.

(Signed)

Ira L. Pool  
Chairman

Chas. W. Copeland  
Secretary

## CAMP ACTIVITIES FOR JANUARY 1935

During the month of January an average of 160 CCC boys per day were released to the camp superintendent for field duty. Twenty-one calendar days were suitable for work during the month.

The men on field duty built 257 wire and rock masonry dams for gully control, planted 3600 trees, sodded 4,000 linear feet of terrace outlet channels with Bermuda sod, sloped and shaped 5 acres of gully and channel banks for sodding and seeding, and maintained, in good condition, all work previously done.

The CCC boys in camp SES-T-3 are a very fine group of young men who are very interested in soil erosion work. They are willing to do any work that is assigned to them and are very quick to learn. They are always in high spirits, never down-hearted or depressed, and look to the future as holding something worthwhile for them.

These young men are proud of the fact that they are having some part in helping to control soil erosion. The things they are learning here will help them to fit into similar work in the sections of the state from whence they came, thereby helping them to become better fitted for life and better citizens. -- J. H. Check, Camp Superintendent.

## VISITORS - JANUARY 20 TO FEBRUARY 20.

Mr. P. E. Wallace, Supt. of Schools, Mt. Pleasant, Texas, and Mrs. Wallace.  
Prof. J. M. Hancock, Vocational Agriculture Teacher, Whitehouse, Texas,  
and 25 farmers.

Mr. S. S. Graham, Vocational Agriculture Department, State Teachers College,  
Huntsville, Texas.

Mr. Oran Richardson, Student, State Teachers College, Huntsville, Texas.

Mr. Alvin Hood, Student, State Teachers College, Huntsville, Texas.

Mr. Joseph Hall, Teacher of Vocational Agriculture, Alto, Texas.

Mr. W. M. Burkes, Conservation Service, Texas Rural Communities, Inc.,  
Littlefield Building, Austin, Texas.

Dr. H. V. Geib, Regional Director, S. E. S., Temple, Texas.

Mr. Rudolph Hensel, Range Manager Specialist, S. E. S., Temple, Texas.

Mr. B. F. Marshall, Assistant Erosion Specialist, S. E. S., Temple, Texas.

Mr. H. O. Hill, Chief Agricultural Engineer, S. E. S., Temple, Texas.

Mr. V. W. Woodman, Chief Agronomist, S. E. S., Temple, Texas.

Mr. W. F. Saage, Assistant Agronomist, S. E. S., Temple, Texas.

Mr. W. J. Newman, Assistant Extension Agent, S. E. S., Temple, Texas.

Mr. Olen Fenner, Extension Agent, S. E. S., Temple, Texas.

Mr. Geo. T. Ratliffe, Erosion Plant Nursery, San Antonio, Texas.

Mr. E. H. Temple, Texas Division Soil Survey, Kaufman, Texas.

Mr. G. M. Morris, County Agent, Harrison County.

Mr. Peterson, Kilgore, Texas.

Messrs. Maunsell Gabbett, J. H. Wood, Frank Gaines, J. R. Carricker,  
Soil Erosion Service, Alabama.



VISITORS CONT'D.

Messrs. W. F. Gintz, Harry F. Morris, Robert N. Cason, Ford Simpson, Richard Haltom, I. L. Sturdevant, R. E. Price (Agricultural Commission, Nacogdoches Chamber of Commerce), and John W. Smelley, W. H. Loveless, Lee Sowell, L. T. Blake, G. H. Hurst, and John Rudisill.

Mr. Samuel Merrill, Jr., Erosion Control Nursery, San Antonio, Texas.

Mr. L. B. Scott, Senior Pomologist, Erosion Plant Studies, Shreveport, La.

Raymond J. Butler, Colored County Agent, and J. B. Sinyard, Colored Home Demonstration Agent of Smith County, and the following colored farmers: Guss Lightfoot, Guy Warren, John Warren, B. B. Whitfield, Wilse Harper, Edward Warren, Frank Block, Acy Lincoln, Cosby Lincoln, J. M. Pinkston, C. G. Lightfoote, Adolph Warren, William Lightfoote, and Luther Butler.

Mr. R. W. Baird, Agricultural Engineer, Soil Erosion Experiment Station, Tyler, Texas.

Messrs. Henry Ross, Teacher of Vocational Agriculture, H. P. Dansby, Elmo Weedon, and C. N. Jones, Bryan, Texas.

Messrs. W. T. La Rue, Teacher of Vocational Agriculture, Eldridge Rogers, Howard Carroll, Keg Quarrels, Oscar Eland, and Edward Mays of Slocum, Texas.

Mr. J. M. Hancock, Teacher of Vocational Agriculture, Whitehouse, Texas.

Mr. A. B. Emmons, Teacher of Vocational Agriculture, Marshall, Texas.

Messrs. L. P. Allen, Teacher of Vocational Agriculture, and Maurice Myers, Kelsey, Upshur County, Texas.

Mr. J. L. Sowell, Teacher of Vocational Agriculture, Gilmer, Texas.

Mr. W. O. Cox, Assistant Manager, Chamber of Commerce, Tyler, Texas.

Messrs. I. S. Price, Teacher of Vocational Agriculture, G. B. English, H. D. Ingram, and Homer Foster, Alba, Texas.

Mr. V. F. Fitzhugh, Teacher of Vocational Agriculture, Tyler, Texas.

Messrs. G. F. Fitzhugh, P. P. Fitzhugh and G. W. Fitzhugh, of Tolar, Texas.

Mr. C. E. Senter, Teacher of Vocational Agriculture, Van, Texas.

Mr. E. D. Bolton, Teacher of Vocational Agriculture, Lindale, Texas.

Messrs. H. M. Mims, Regional Director, and J. D. Huckaby, Soil Erosion Service, Minden, Louisiana.

Mr. L. L. Hale, Teacher of Vocational Agriculture, Henderson, Texas, and forty-seven students.

Mr. Walter V. Kell, Associate Agronomist, Soil Erosion Service, Washington, D. C.